CLAIMS

1. A method for registering with a plurality of registration zones in a wireless communication network, the method comprising:

receiving an assignment for a first Temporary Mobile Station Identity (TMSI) from a first network entity in response to registration with a first registration zone;

registering with a second network entity in a second registration zone; and

receiving an assignment for a second TMSI from the second network entity in response to registration with the second registration zone.

2. The method of claim 1, wherein each registration zone corresponds to a Radio TMSI (R-TMSI) zone defined by GSM MC-MAP standard.

3. The method of claim 1, wherein each network entity corresponds to a base station in the communication network.

4. The method of claim 1, further comprising:

maintaining a first counter to provide an indication to initiate timer-based registration; and

initiating timer-based registration if a value in the first counter exceeds a timer-based registration count value.

5. The method of claim 4, further comprising:

receiving a value representative of a maximum expiration period for timer-based registration; and

setting the timer-based registration count value based on the received value.

6. The method of claim 5, wherein the timer-based registration count value is a pseudo random value in a range between zero and a maximum value related to the received value.

7. The method of claim 1, wherein the registration with the second network entity is in response to entering the second registration zone.

8. The method of claim 1, wherein the registration with the second network entity is implicitly performed in response to establishing a connection with the second network entity.

9. The method of claim 1, wherein the first registration zone is entered first and the second registration zone is subsequently entered, the method further comprising:

activating a first timer for the first registration zone upon registration with the second network entity.

10. The method of claim 9, further comprising:

updating a count value for the first timer at each update interval; and

timing out registration with the first registration zone if a count value for the first timer exceeds a time-out value.

11. The method of claim 10, wherein the time-out value for the first timer for the first registration zone is provided by the second network entity.

12. The method of claim 1, further comprising:

deactivating a second timer for the second registration zone upon registration with the second network entity.

13. The method of claim 1, further comprising:

maintaining a zone list having a plurality of entries, one entry for each registration zone in which TMSI has been assigned and with which registration is currently valid.

14. The method of claim 13, further comprising:

receiving a value indicative of a maximum number of registration zones with which registration is allowed; and

deleting one or more entries from the zone list such that the number of entries maintained in the zone list is equal to or less than the maximum number of allowable registration zones.

15. The method of claim 14, wherein oldest entries in the zone list are deleted first.

16. The method of claim 15, wherein the oldest entries in the zone list are determined by associated timers activated for the entries.

17. The method of claim 13, wherein each entry in the zone list corresponds to an active registration zone, and wherein each entry includes

a zone number of the active registration zone,

a zone code assigned for the active registration zone, and

an entry timer for providing an indication used to time out registration with the active registration zone.

18. The method of claim 17, wherein each entry in the zone list further includes

a time-out count indicative of a maximum time-out period for registration with the active registration zone, and

wherein a time-out period for registration with the active registration zone is determined based in part on the time-out count.

19. The method of claim 1, wherein registration is enabled while in a connected state indicative of an established RRC connection between a mobile station and a base station.

20. The method of claim 1, wherein RR-level registration is enabled via a message from a network entity.

21. The method of claim 4, wherein timer-based registration is enabled via a message from a network entity.

22. The method of claim 1, wherein the wireless communication network conforms to cdma2000 standard.

23. The method of claim 22, wherein the wireless communication network further supports GSM MC-MAP standard.

24. A method for registering with a plurality of Radio Temporary Mobile Station Identity (R-TMSI) zones in a wireless communication network, the method comprising:

registering with a first base station in a first R-TMSI zone;

receiving an assignment for a first R-TMSI code from the first base station in response to registration with the first R-TMSI zone;

registering with a second base station in a second R-TMSI zone; and

receiving an assignment for a second R-TMSI code from the second base station in response to registration with the second R-TMSI zone.

25. The method of claim 24, wherein the first registration zone is entered first and the second registration zone is subsequently entered, the method further comprising:

activating a first timer for the first R-TMSI zone upon registration with the second base station; and

deactivating a second timer for the second R-TMSI zone upon registration with the second base station.

26. The method of claim 25, further comprising:

updating a count value for the first timer at each update interval; and

timing out registration with the first R-TMSI zone if the count value for the first timer exceeds a time-out value.

27. A method for managing multiple Temporary Mobile Station Identities (TMSIs) in a radio communication network, the method comprising:

assigning a first TMSI to a mobile station via a first base station when the mobile station enters a first Radio TMSI (R-TMSI) zone;

registering the mobile station with a second base station in a second R-TMSI zone; and

assigning a second TMSI to the mobile station via the second base station so that the mobile station is registered in a plurality of R-TMSI zones.